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State of Utah

DEPARTMENT OF NATURAL RESOURCES

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Division of Oil, Gas and Mining

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June 16, 2011

Tom Newman
Holcim (U.S.), Inc
6055 East Croydon Road
Morgan, Utah 84050

Subject: Fourth Review of Notice of Intention to Commence Large Mining Operations, Holcim (U.S.) Inc., Devils Slide Quarry, M/029/0001, Morgan County, Utah

Dear Mr. Newman:

The Division has completed a review of your Notice of Intention to Commence Large Mining Operations for the Devil's Slide Mine, which was received June 2, 2010. I apologize for the time it has taken to complete the review. The attached comments will need to be addressed before tentative approval may be granted. In addressing the comments, it is suggested that we meet to discuss any issues that are not clear.

The comments are listed under the applicable Minerals Rule heading; please format your response in a similar fashion. Please address only those items requested in the attached technical review by sending replacement pages of the original mining notice using redline and strikeout text. After the notice is determined technically complete and we are prepared to issue final approval, we will ask that you send us two clean copies of the complete and corrected plan. Upon final approval of the permit, we will return one copy stamped "approved" for your records.

The Division will suspend further review of the Notice of Intention until your response to this letter is received. If you have any questions in this regard please contact me at 801-538-5261 or Leslie Heppler at 801-538-5257. Thank you for your cooperation in completing this permitting action.

Sincerely,

Paul B. Baker
Minerals Program Manager

PBB:lah:eb

Attachment: Review

cc: BLM lgarahana@blm.gov, sallen@blm.gov

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**Fourth REVIEW OF NOTICE OF INTENTION
TO COMMENCE LARGE MINING OPERATIONS**

**Holcim (US) Inc.
Devil's Slide Mine
M/029/0001
June 16, 2011**

General Comments:

Comm ent #	Sheet/Page/ Map/Table #	Comments	Initials	Review Action
1	General	Submittal should be formatted to easily incorporate additional revisions and amendments. Please remove tabs for each small text section from R647-4-104 thru 112.1.4.	lah	
2	General	The Division may have additional comments based on future submittals. Every attempt should be made by the Operator to submit a complete NOI.	lah	
3	General	There are several maps, reports, etc., that have been stamped "Confidential." The only material the Division can hold as confidential is trade secrets and information relating to the nature, location, and size of the mineral deposit. Please ensure everything stamped confidential meets these criteria and replace those stamped pages and maps that are not confidential.	lah	
4	General	In the reply to this review, please show where each comments has been addressed.	lah	
5	General	Please use consistent units, not both metric and English. The standard in the US is English; please convert all units to English. (English slope units are H:V.)	lah	
6	Page 50	Authorized officer of the company must be registered with the Division of Corporations. According to the Division of Corporations, Gian Raffainer is not an authorized officer of the company	lah	

R647-4-104 - Operator's, Surface and Mineral Ownership

Comm ent #	Sheet/Page/ Map/Table #	Comments	Initials	Review Action
7	Omission	Submit a mineral and surface ownership map and include ownership of adjacent property.	lah	

R647-4-105 - Maps, Drawings & Photographs

General Map Comments

Comm ent #	Sheet/Page/ Map/Table #	Comments	Initials	Review Action
8	Figure 1	Figure 1 is included but not listed in the Appendix. Please list in the appendix and refer to the drawing under appropriate sections, including the surety section.	lah	

Comm ent #	Sheet/Page/ Map/Table #	Comments	Initials	Review Action
9	All Maps	The majority of the maps are difficult to read. Most scales are incorrect. Much of what is noted in legend doesn't appear on the map. Please correct all maps and delete parts of the legend that are not correct. Increase the font size on drawings so the text is legible.	lah	
10		The Division suggests a meeting to discuss the best and most cost effective formats for the maps.		
11	All Maps	Maps are mislabeled. Maps listed in text are out of sequence with labels on each map. Example – Maps under section 105.2 text are labeled as "105.3, 105.4, 105.4a, 105.4b."	lah	

105.1 - Topographic base map, boundaries

Comm ent #	Sheet/Page/ Map/Table #	Comments	Initials	Review Action
11	Map 105.1	As with all maps, the map is difficult to read. The scale is shown as 1"=2000'. Much of what is noted in legend doesn't appear on the map. Please correct the map and delete parts of the legend that are not correct, zoom in on the property and include labels from USGS map.	lah	
13	Map 105.2	As with all maps, the map is difficult to read. Scale is shown as 1"=500'. The scale bar as shown is at a different scale (in the 1 st binder). Much of what is noted in the legend doesn't appear on the map. Please correct the map and delete parts of the legend that are not correct. Increase the font size on drawings so the text is legible.	lah	

105.2 - Surface facilities map

Comm ent #	Sheet/Page/ Map/Table #	Comments	Initials	Review Action
14	Text page 6	Figure 105.3 is not included in the NOI, but is included in a confidential section and not noted in the text as a confidential document. Please note in the text the location of all figures. As per rule the nature and size of the ore body can be confidential. This figure is critical for bonding and does not appear to have anything that needs to be kept confidential.	lah	
15	Figure 105.3	Once again, it does not appear this figure meets the criteria for holding it confidential. Information about surface facilities is critical for bonding purposes, and these facilities can be seen on aerial photos available through many sources on the Internet. The scale shown as 1"=100' appears to be wrong as parking stalls are not five feet wide. Much of what is noted in the legend doesn't appear on this map. The Division needs an accounting of all facilities that is consistent with the map. There are many other maps noted in the legend that should be deleted as they are not part of the Division's NOI. Facilities should be labeled as in the legend A,B,C etc. Utilities appear to be wrong.	lah	
16	Figure 105.3	Drill holes are shown on the maps but not numbered. The Division needs an accounting of what drill holes need to be plugged and how much it would cost (depth and diameter). Ideally, the plan should include a table that is tied to the figure and the bond calculation.	lah	

Comm ent #	Sheet/Page/ Map/Table #	Comments	Initials	Review Action
17	Figure 105.3 – large map	Many of the general comments listed above apply, but the scale appears to be correct. Main corrections needed are the drill data, fix the legend, and remove drawing numbers for the items, if the drawings are not included in the NOI.	lah	
18	Figure 105.4	As per rule, the nature and size of the ore body can be confidential. This figure is of surface facilities, is critical for bonding should not be considered confidential. The scale is shown as 1"=500' and appears to be wrong as the paved roads are not ten feet wide. Much of what is noted in the legend doesn't appear on this map. The Division needs an accounting of all facilities that is consistent with the map. There are many other maps noted in the legend that need to be deleted as they are not part of the Division's NOI. Facilities should be labeled as in the legend A,B,C etc. Utilities appear to be wrong.	lah	
19	Figure 105.4	Drill holes shown on the maps can't be read because of the scale of the map. The Division needs an accounting of what drill holes need to be plugged and how much it would cost (depth and diameter), so a table that is tied to the figure and the bond calculation would be ideal.	lah	
20	Figure 105.4	Map includes postmining reclamation treatments. This clutters up the map showing surface facilities. Please put these CAD layers on a separate map clearly defining what is to be reclaimed in the future.	lah	
21	Figure 105.4 – large map	This map was not stamped as confidential, and many of the comments in 19-21 above apply to this map also.	lah	

105.3 - Drawings or Cross Sections (slopes, roads, pads, etc.)

Comm ent #	Sheet/Page/ Map/Table #	Comments	Initials	Review Action
22	Omission	Please include a geologic map.	lah	
23	Figure 105.4a	All 3 scales on the map are different. Please complete the legend.	lah	
24	Figure 105.4a – Large map	All 3 scales on the map are different. Please complete the legend.	lah	
25	Figure 105.4b	The figure and the bar scale are at the same scale, but the are different than the scale noted in the title block. The legend is not complete. The legend notes a fracture zone for lithologic contact.	lah	
26	Figure 105.4b – Large map	Same comments as for item 26 above.	lah	
27	Figure 105.4c	The figure and the bar scale are at the same scale, but the are different than the scale noted in the title block. The legend is missing. Note the green, blue and black patterns; some printing in yellow on the left edge is illegible; note the original ground surface and maximum slope angles.	lah	
28	Figure 105.4c – large map	The figure and the bar scale are at the same scale, but the are different than the scale noted in the title block. Please complete the legend. Note green, blue and black patterns; some printing in yellow on left edge can't be read; note the original ground surface and maximum slope angles. The horizontal scale is illegible – Please increase the font size.	lah	

Comm ent #	Sheet/Page/ Map/Table #	Comments	Initials	Review Action
29	Page 7	Figure 105.5 is not included in the NOI but is included in a confidential section and not noted in the text as a confidential document. Please note the location of all figures in the text. As per rule the nature and size of the ore body can be confidential. The Division prefers that maps are not labeled as confidential.	lah	
30	Figure 105.5 & Highwall slope design	As shown this map really doesn't add anything to the plan. Please explain why this map is included. The next figure which is listed as Highwall Slope Design has actual design data, yet it doesn't show both pits. Toe to crest angles need to be listed on the cross sections.	lah	
31	Figure 105.5 – large map	As shown this map really doesn't add anything to the plan. Please explain why this map is included. The legend is incorrect – the line around the highwall is listed as a fault. There is a bit of geology included, but it isn't complete.	lah	
32	Page 7	Figure 105.5a is not included in the NOI, nor in confidential pages, and it is not noted in the text as a confidential document. Text on page 7 notes 105.5a is highwall, but it is missing.	lah	
33	Figure 105.5b – both maps	Figure is called Typical Quarry Sections. The Division needs to know which cross sections are for operations and which are for reclamation. Use H:V and not Rise:Run and be consistent with the geotechnical report. Add scale to drawing or note all dimensions on the diagram. Add toe to crest angle. It is not clear if all the highwalls (east, west and north) will have the same angle.	lah	
34	Figure 105.6	No problem for scale and it appears the scale might be ideal for other figures. Legend should include more basic detail, such as a statement that an area will be top soiled and seeded or ripped and seeded.	lah	
35	Figure 105.5 – large map	Scale is wrong: as shown 1" is not 1 inch. Legend should include more basic detail as discussed above.	lah	
36	Figure 105.5a – Large map	Scale is incorrect: as shown 1" is not 1 inch. Neither the current topography nor the final topography is confidential.	lah	
37	Figure 105.5c – Large map	Scale is incorrect: as shown 1" is not 1 inch. Water and streams are shown on the legend, but not shown on the map. Neither the current topography nor the final topography is confidential.	lah	
38	Map 105.6a – large map	Scale is incorrect: as shown 1" is not 1 inch. Legend does not match the map. Reclamation is not confidential.	lah	
39	Map 105.6b	This map does not show locations of existing or future topsoil stock piles as indicated on page 43 of your response.	lk	
40	Map 105.6a – large map	Scale is incorrect: as shown 1" is not 1 inch. As shown finished pits drain toward the river and not toward the back of the pit. Please revise to limit run off. Reclamation not is confidential.	lah	
41	Map 109.1	Scale is incorrect; legend doesn't match symbols on the map. Please correct.	lah	
42	Map DCC-1597, DCC-1338-97, Geology Map, DCC-1581, & DCC-1340-3	These maps are in the binder but not shown under the Lists of Figures or referenced in the body of the text. Please add to list of figures and note that they are from the previous permit. These maps are for reference only and they were not reviewed for correctness.	lah	

105.4 - Photographs

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Comm ent #	Sheet/Page/ Map/Table #	Comments	Initials	Review Action
43	Omission	The Division recommends including photo documentation.	lah	

R647-4-106 - Operation Plan

General Operation Comments

Comm ent #	Sheet/Page/ Map/Table #	Comments	Initials	Review Action
44	General	Numerous times throughout section 106, the NOI refers to previous plans. Please copy appropriate information and include in the NOI. This needs to be a stand-alone document.	lah	

106.1 - Minerals mined

Comm ent #	Sheet/Page/ Map/Table #	Comments	Initials	Review Action
45	Page 9	The Division understands the shale layers are also mined to make the Portland Cement	lah	

106.2 - Type of operations conducted, mining method, processing etc.

Comm ent #	Sheet/Page/ Map/Table #	Comments	Initials	Review Action
46	Page 10 para 3	The plan says quarries 1, 2 and 3 are shown, yet only 2 pits are shown and nothing is labeled on figure 105.5.	lah	
47	Page 10 Para 3	There is no figure labeled as "Final Mine Plan Design for Quarries 172" as written.	lah	
48	Page 10 Para 4	As written "2v:1h" then "3V:1H", please be consistent and follow Slope Stability Report. Use English Units	lah	
49	Page 10 Para 4	No variance has been approved at this time for the 2002 reclamation plan. Please reword.	lah	
50	Page 10 Para 5	The small sandstone pit needs to be included in cross sections and post mining reclamation.	lah	

106.3 - Estimated acreages disturbed, reclaimed, annually

Comm ent #	Sheet/Page/ Map/Table #	Comments	Initials	Review Action
51	Omission	Nothing is written, about any reclamation to be done annually. If it is the intent of the operator, not to do any reclamation until mining is complete, please include a sentence to that effect in the NOI.	lah	

106.5 - Existing soil types, location, amount

Comm ent #	Sheet/Page/ Map/Table #	Comments	Initials	Review Action
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Comment #	Sheet/Page/ Map/Table #	Comments	Initials	Review Action
52		<p>The comments made under this section from the last review were apparently not addressed. The NOI still says there are no topsoil stockpiles, and that the area for mining has no topsoil available for salvaging. While agreed that there is no soil available in the existing disturbed area footprint, the soil survey, (and the photos confirm this) indicates that there are soils that should be salvaged on the current undisturbed adjacent areas.</p> <p>Please show locations of topsoil stockpiles on a map. Note, most areas (with exception of the rock outcrop areas) have suitable soils for salvaging (both quality and quantity). Volume estimates need to be provided for salvaging these soil materials and the locations of any soil stockpiles should be identified on a map. See also comments under 105.3.</p> <p>Section 110.5 indicates that when soils are encountered, they will be salvaged and stockpiled. As stated above, locations of topsoil stockpiles need to be shown on a map.</p>	<p>Lk</p> <p>Lk</p> <p>lk</p>	

106.6 - Plan for protecting & re-depositing soils

Comment #	Sheet/Page / Map/Table #	Comments	Initials	Review Action
53		There have been soils salvaged in the past (waste rock disposal area) and stockpiles do exist on site (as observed during past inspections and shown on your map). Please describe how these stockpiles are protected until topsoil is used for reclamation.	lk	

106.7 – Existing Vegetation – species and amount

Comment #	Sheet/Page/Map/Table #	Comments	Initials	Review Action
54	Omission	The NOI references Appendix 7, but in Appendix 7, it is listed as confidential. The Division has not been able to find this information within the confidential section of the plan.	lah	

106.8 - Depth to groundwater, extent of overburden, geology

Comment #	Sheet/Page/Map/Table #	Comments	Initials	Review Action
55	17	Discuss in the text the elevation of the ground water in the water well and the proposed pit. Groundwater was noted during an inspection.	lah	
56	18	There is no discussion on the extent of the overburden or geology. Please add the geology from the 1987 reclamation plan into the current NOI. Refer to the geology map (which has yet to be submitted; see comment #19 above).	lah	

106.9 - Location & size of ore, waste, tailings, ponds

Comment #	Sheet/Page/Map/Table #	Comments	Initials	Review Action
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Comment #	Sheet/Page/Map/Table #	Comments	Initials	Review Action
57	Page 18, Para 2	As per rule, the nature and size of the ore body can be confidential. The analysis in Appendix 2 cannot be kept confidential. Please move to the main appendix.	lah	
58	Page 18, para 2	Please include a brief narrative on how the kiln dust stockpiles (past and present) are monitored for discharge.	lah	
59	Page 18, para 4	See comment #30 above.	lah	
60	Page 18 Para 6	As per rule, the nature and size of the ore body can be confidential. The BMP's in Appendix 4, cannot be kept confidential. Please move to the main appendix.	lah	

R647-4-107 – Operation Practices

Comment #	Sheet/Page/Map/Table #	Comments	Initials	Review Action
61	all	This section is no longer needed and is dominantly repeated under the operation plan, Section 106. Please move any text not already written under 107 to 106 and include the following statement under 107: "Operation Practices will be consistent with the Operation Plan (R647-4-106)".	lah	

R647-4-109 - Impact Assessment

109.1 - Impacts to surface & groundwater systems

Comment #	Sheet/Page/Map/Table #	Comments	Initials	Review Action
62		The hydrology section was found in the confidential section and needs to be included in the main body of the plan. It is a good plan and provides the necessary information. There have been documented problems with the pond adjacent to the Weber River. Please address what structural improvements have been added to this design, to ensure the embankment will not fail.	TM	

109.2- Impacts to threatened and Endangered Species

Comment #	Sheet/Page/Map/Table #	Comments	Initials	Review Action
63	31	Please include comments about potential effects on the greater sage-grouse, yellow-billed cuckoo, and the black-footed ferret.	lah	

109.3 - Impacts on existing soils resources

Comment #	Sheet/Page/Map/Table #	Comments	Initials	Review Action
64		Comments from the last review for this section were apparently not addressed. Soil resources are impacted by this mining operation. Please discuss the impacts to soil resources and the steps to mitigate these impacts.	lk	

109.4 - Slope stability, erosion control, air quality, safety

Comment #	Sheet/Page/Map/Table #	Comments	Initials	Review Action

Comment #	Sheet/Page/Map/Table #	Comments	Initials	Review Action
65	Page 33 para 1	It is suggested that the Operator have the geotech of record review the text in this section and rewrite for correctness. Each paragraph should refer the factor of safety	lah	
66	Figure 109.1	Symbol for catch basins is incorrect at the scale presented; please correct. Scale is noted at 1"=500'; please correct for printing. Fix legend for items not visible at scale printed	lah	
67	Page 33 Para3	This section says a variance has been granted for slope angle, but the paragraph discusses various slopes. Please clarify.	lah	
68	Add	The plan says the operator will maintain a minimum factor of safety of 1. Please commit in the text that slope stability will be regularly monitored on an ongoing basis (site schedule) and that a minimum factor of safety (FOS) will be maintained. Commit that additional geotechnical evaluations will be done if the geology, phreatic surface, or the structural regimes change as new working faces are excavated or as warranted.	lah	

109.5 - Actions to mitigate any impacts

Comment #	Sheet/Page/Map/Table #	Comments	Initials	Review Action
69	Omission	Please include the operator's actions to mitigate any impacts (109.1 – 109.4).	lah	

R647-4-110 - Reclamation Plan

110 - General

Comment #	Sheet/Page/Map/Table #	Comments	Initials	Review Action
70	Figure 105.6a	As per rule, the nature and size of the ore body can be confidential. This figure is of the ripping plan, and should not be confidential. Much of what is shown on the map is not included in the legend; please include the color code of roads on the map in the legend	lah	

110.2 - Roads, highwalls, slopes, drainages, pits, etc., reclaimed

Comment #	Sheet/Page/Map/Table #	Comments	Initials	Review Action
71	Page 37 Para 1	Please show on reclamation maps the minor access road to be left.	lah	
72	Page 37 Para 2	The Division can't locate Exhibit 105.6 but can find Figure 105.6. Figure 105.6 is very generalized and needs more detail.	lah	
73	Page 37 para 2	Figure 105.6a should not be marked as confidential.	lah	
74	Page 37 Para 3 & 4	Both paragraphs discuss roads that are used during operations. The focus of rule 110.2 is post mining reclamation. Please note how the roads will be reclaimed.	lah	
75	Page 37 Para 5 & 6	As per comment #5 listed above, the two paragraphs alternate between English and metric units and one notes 2V:1H and then 2H:1V. Please correct.	lah	
76	Page 37 Para 6	Appendix 9 is the SWPPP and not the Geotech report; please correct.	lah	

Comment #	Sheet/Page/Map/Table #	Comments	Initials	Review Action
77	Page 37 Para 5 & 6	Show on reclamation map the benches that are proposed to be reclaimed and to be seeded.	lah	
78	Page 38 Para 1	Please modify the text to note what will happen between reclamation and when the vegetation will be established.	lah	
79	Page 38 Para 2	Show the locations of the French drains on the reclamation map.	lah	
80	Page 38 Para 3 & 5	The NOI is a stand-alone document and should not refer to the last permit. Please include appropriate text from 1987 into this document.	lah	

110.3 - Description of facilities to be left (post mining use)

Comment #	Sheet/Page/Map/Table #	Comments	Initials	Review Action
81	Page 39	As noted above, any road or pond to be left at the request of the private landowner needs to be documented and shown on the reclamation map.	lah	

110.4 - Description or treatment/disposition of deleterious or acid forming material

Comment #	Sheet/Page/Map/Table #	Comments	Initials	Review Action
82	Page 40	Bonding is based on worse case conditions; please list the maximum amount of deleterious materials.	lah	

110.5 - Revegetation planting program

Comment #	Sheet/Page/Map/Table #	Comments	Initials	Review Action
83		This comment was in the previous review: "Please provide details of topsoil redistribution. Include type(s) of equipment to be used, locations of where soils will be replaced (show on reclamation map), and the depth of replacement. (if areas will receive different depths, show these areas as well on the reclamation map." Please fully address this comment.	lk	
84		This comment was in the previous review: "Please provide details regarding seeding methods, timing and soil amendments/fertilizers that will be incorporated during final seeding of the disturbed areas." Please provide these specific details.	lk	
85	Page 41 Para 2	The plan says a variance has been granted for solid rock outcrops and that these outcrops existed before mining began. The revegetation standard is that the postmining vegetation cover should be at least 70 percent of the premining cover. If no vegetation existed before mining, no vegetation is required after mining and no variance is needed.	lah	

R647-4-111 - Reclamation Practices

Comment #	Sheet/Page/Map/Table #	Comments	Initials	Review Action
86	Tab	This section is not needed; simply include a commitment to follow the reclamation plan.	lah	
87	Page 44	Move the text to the reclamation plan.	lah	

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Comment #	Sheet/Page/Map/Table #	Comments	Initials	Review Action
88	Page 44	Map 105.6B could not be found.	lah	

R647-4-112 - Variance

Comment #	Sheet/Page/Map/Table #	Comments	Initials	Review Action
89	All of section page 45-49	As written the sections conflict. A slope stability variance will be granted when the geotech of record provides an adequate geotechnical report that is stamped and provides clear recommendations.	lah	
90	Page 46	The stability analysis does not note the FOS for 0.25H to 1V slope angle.	lah	
91		The geotech of record needs to rewrite the paragraph on the justification. "Because it has been stable" is not justification. Stability analysis has been done and has been stamped. Present a summary of the report in the text.	lah	
92	Appendix 8 Stability Analysis	General Comment – All figures need to have a north arrow.	lah	
93	Appendix 8 General Comment	General Comment – Please include Rose diagrams for the stereonet data, as pattern in data set appears to be related to drill hole orientation.	lah	
94	Appendix 8 Page viii	Executive summary needs to include recommendations by the designer of record with FOS.	lah	
95	Appendix 8 General Comment	Write report in all English units and not in part metric units. Use H to V.	lah	
96	Appendix 8 Page viii	The geotech report says "groundwater is not known to exist in most subsurface locations". Please comment in the text that the operator will monitor slope stability on a regular and on an ongoing basis (site schedule) and that a minimum factor of safety (site FOS) will be maintained. Commit that additional geotechnical evaluations will be done if the geology, phreatic surface, or the structural regimes change as new working faces are excavated or as warranted.	lah	
97	Appendix 8 Page ix	The geotech report says "rockfall potential will be very high." The rockfall issue should be addressed in the report. Please give specific recommendations that don't include phrases like "may be" and "could be."	lah	
98	Appendix 8 Page ix	The geotech report says "catch bench stability is not adequate" Catch bench stability needs to be addressed. Please give specific recommendations that don't include phrases like "may be" and "could be."	lah	
99	Appendix 8 Page 1 para 3	The purpose of the study is to include the minimum FOS that will be maintained by the mine.	lah	
100	Appendix 8 Page 2 para 1	As written "figure 1 is a general outline..." Please include a typical cross section to show maximum slope angles, bench width, etc. If all pit walls are to be designed with the same configuration, include one typical cross section. If recommended slope angle varies for different orientations of pit wall, include a typical cross section for each orientation that varies.	lah	

Comment #	Sheet/Page/Map/Table #	Comments	Initials	Review Action
101	Appendix 8 Page 5 para 3	No stereonet were found. Include geomechanical methods that were performed on the core. No mention was made if a gyroscopic study on hole deviation was included; please discuss in the paragraph the ramification of hole deviation. Also include a discussion in the paragraph about oriented core. No mention is made of any downhole surveys, such as BIPS.	lah	
102	Appendix 8 Page 5 para 5	There is no mention of toppling failures, yet the paragraph clearly notes the steeply dipping units.	lah	
103	Appendix 8 Page 13 to 34	Under each paragraph of the rock mass strength, the text refers to the tables. Please summarize each table in the text for the operator. Slope angle should not exceed the slope angle of the weakest unit, dependent upon the orientation of the weakest unit.	lah	
104	Appendix 8, Table XVII & XVIII	As shown RQD percentages are extremely high for shales; please verify with photos of core.	lah	
105	Appendix 8, Page 30 & most tables	DOGM is not familiar with the South African CSIR method, but the bedding planes orientation and characteristics of the shales should be included in rock mass characterization, and as shown in most charts presented, it does impact stability. Please address the bedding planes of the shales.	lah	
106	Appendix 8, Page 34 third complete paragraph	The plan says, "Based upon available information, groundwater will be assumed...". Please provide the elevation when the operator needs to do additional analysis of the slope stability to maintain the FOS. Commit that additional geotechnical evaluations will be done if the geology, phreatic surface or the structural regimes change as new working faces are excavated or as warranted.	lah	
107	Appendix 8, Page 34	As written "during more than 100 years...". Seismic return periods for the Wasatch fault are not 100 years; please use actual known data as it applies.	lah	
108	Appendix 8 Page 35	For each of the effects listed for groundwater pressurization, include recommendation, such as cleaning catch benches, no sub drill into the benches. Give a specific minimum that needs to be maintained		
109	Appendix 8 Page 37 Para 2 & 3	Thank you for the recommended FOS. Recommend that additional geotechnical evaluations will be done if the geology, phreatic surface or the structural regimes change as new working faces are excavated or as warranted to maintain the recommended FOS.	lah	
110	Appendix 8 Table XXIV	As shown the northeast endwall is below the recommended 1.25 FOS at a 0.5H:1V slope angle. Please modify all text and figures to follow the table.	lah	
111	Appendix 8 Page 40	Figure 6 should be included in the NOI, showing maximum OA for each orientation of slope.	lah	
112	Appendix 8 Pages 36 to 45	These pages are very well written, and many of the comments written by DOGM listed above note what is listed on pages 36 to 45. The conclusions of the report are to be included in the NOI.	lah	

R647-4-113 – Surety

Comment #	Sheet/Page/Map/Table #	Comments	Initials	Review Action
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Comment #	Sheet/Page/Map/Table #	Comments	Initials	Review Action
113	Appendix 3	Please use the Division's spreadsheets to compute the reclamation cost estimate. The spreadsheets are available at the Division's webpage. Divide the work into demolition, earthwork and vegetation. The earthwork costs should be based on the reclamation plan and include such items as amount of material to be moved, haul distances, grades and type of equipment used. The vegetation costs must be based on the reclamation plan.	whw	
114	Appendix 3	Use current unit prices instead of escalating those costs from 2004. Please use the current Means numbers for each activity. Means does change the numbers from year to year.	whw	
115	Appendix 3	Please base the reclamation costs on the worst case scenario, which means the maximum amount of disturbance. For example, the plan assumes that no stockpile will exist at reclamation because all stockpiles will be converted into product. If the bond was forfeited, all of the stockpiles might not have been converted into product.	whw	

Appendix

Comment #	Sheet/Page/Map/Table #	Comments	Initials	Review Action
116	Appendix 1, 2, 4, & 8	Please see comments above about the confidential nature of the maps.	lah	
117	Appendix 1, 2, 4, & 8	Please list which map numbers are in appendixes 1,2, 4, & 8.	lah	
118	Appendix 3	Please use current unit prices instead of escalating those costs from 2004. Use the current Means numbers for each activity. Means does change the numbers from year to year.	whw	
119	Appendix 3	Reclamation costs must be based on the worst case scenario, which means the maximum amount of disturbance. For example, the plan assumes that no stockpile will exist at reclamation because all stockpiles will be converted into product. If the bond was forfeited, all of the stockpiles might not have been converted into product.	whw	